



Chronic CAD/Stable Ischemic Heart Disease

OSTEOPROTEGERIN AND OSTEOPONTIN SERUM LEVELS ARE ASSOCIATED WITH VASCULAR FUNCTION IN CORONARY ARTERY DISEASE: THE ROLE OF INFLAMMATION

Moderated Poster Contributions

Poster Sessions, Expo North

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Session Title: Stable Ischemic Heart Disease: Risk Predictors and Biomarkers

Abstract Category: 9. Chronic CAD/Stable Ischemic Heart Disease: Basic

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Background: Osteoprotegerin (OPG) and osteopontin (OPN) have recently emerged as key factor in both vascular remodeling and atherosclerosis progression. Interleukin-6 is a well established inflammatory marker contributing to the development of atherosclerosis. Endothelial function and arterial stiffness are significant factors of clinical evaluation in patients with coronary artery disease (CAD). We evaluated the relation of OPG, OPN, and Interleukin-6 serum levels with vascular function in CAD.

Methods: We enrolled 280 patients with CAD (mean aged 61 ± 11 years), and 129 control subjects (mean aged 60 ± 12 years). OPG, OPN and Interleukin-6 serum levels were measured using ELISA. Endothelial function was evaluated by flow mediated dilation (FMD) in the brachial artery and carotid-femoral pulse wave velocity (PWV) was measured as an index of aortic stiffness.

Results: There was no statistically significant difference between control subjects and CAD patients according to age and sex. Compared to control subjects, CAD patients had significantly impaired FMD ($p < 0.001$) and increased PWV ($p = 0.006$). CAD patients had also significantly higher levels of OPG (3.91 ± 1.87 pmol/l vs. 2.88 ± 2.17 pmol/l, $p < 0.001$), logOPN (1.81 ± 0.18 ng/ml vs. 1.71 ± 0.24 ng/ml, $p < 0.001$) and logInterleukin-6 (0.44 ± 0.44 pg/ml vs. 0.25 ± 0.31 pg/ml, $p = 0.006$), compared to control subjects. More importantly, PWV were positively associated with serum OPG levels ($r = 0.19$, $p < 0.01$), serum logOPN levels ($r = 0.10$, $p = 0.049$) and log Interleukin-6 levels ($r = 0.21$, $p = 0.008$) and FMD was negatively associated with OPG levels ($r = -0.126$, $p = 0.048$). Finally, logInterleukin-6 levels were associated with logOPN and OPG serum levels ($r = 0.19$, $p = 0.02$ and $r = 0.21$, $p = 0.008$, respectively).

Conclusions: Our findings indicate that CAD patients have increased OPG, OPN and Interleukin-6 levels. Moreover, there is a consistent association between OPG and OPN serum levels, arterial wall properties and inflammation in CAD patients. These preliminary findings suggest another possible mechanism linking OPG and OPN serum levels with CAD progression through arterial wall stiffening and inflammation.